

### **REMARKS/ARGUMENTS**

In the Office Action dated 5 March 2008, the Examiner objected to the specification and rejected claims 1-28. After consideration of the Office Action, claims 1, 4, 8, 10, 11, 15, 18, 22, 24, and 25 have been amended. Claims 1-28 are under consideration in the present application. Applicant respectfully requests reconsideration of the application by the Examiner in light of the above amendments and the following remarks.

#### **Formal Matters**

In the specification, paragraphs 20, 26, and 27 have been amended to correct figure numbering errors that were present in the application. Applicant thanks the Examiner for pointing out these typing errors and submits that the informalities have been corrected.

#### **35 USC 112**

Although Applicant does not agree with each of the indefiniteness rejections, Applicant has attempted some claim amendments in response

In claim 1, Applicant has added language to clarify the receptive for mounting wording as follows: "electrically receptive to provide an interconnection pattern for mounting solar cells" with support being found, for example, in paragraphs 18-19 of the Specification and a portion of claim 8 as originally filed. Additionally, Applicant has changed "concentrator" to "reflector."

In claim 4, the language has been simplified to reference the peripheral edges of the solar cell directly.

In claim 10, this claim has been simplified to reflect that it is the heat from at least one solar cell and it is the edge of the module.

In claim 11, the edge language has similarly been modified.

In claim 13, "said edges" has been changed to "at least one edge."

Similar changes have additionally been made to related claims 15, 18, 22, 24, and 25.

Therefore, Applicant respectfully submits that claims, particularly as amended, are in compliance with the requirements of 35 USC 112, second paragraph.

#### **35 USC 102 (b) on Kardauskas**

Claims 1-3, 7-12, 15-17, and 21-26 were rejected under 35 USC 102(b) over Kardauskas US5994641.

Claim 1, as amended, recites : "a metal foil bonded to said insulative substrate on a first surface **and electrically receptive to provide an interconnection pattern for mounting solar cells on a second surface opposite said first surface...** ." Thus claim 1 recites that the metal foil is used for cell interconnection of the type shown in Applicant's FIG. 3 and that the portions not intended to underlie the cells (the exposed portions) are used for light reflection. This same language is present in Applicant's amended claim 15.

Kardauskas appears to relate to placing a reflecting coating between wafer locations. This layer does not appear to be used for wafer interconnection.

Applicant notes the Office Action statement on page 5 regarding claim 8. However, Applicant respectfully submits that the coating of Kardauskas is patterned to leave spaces for which the wafers will be located but not to interconnect them.

Applicant notes the Office Action statements on page 5 regarding claims 9-10. Applicant agrees that the coating is metal. However, the coating is not shown as touching any of the wafers and it is not clear that the metal has sufficient thickness or volume to provide such heat channeling.

Accordingly, Applicant respectfully submits that claim 1, claims 2, 3 and 7-12 which depend therefrom, claim 15, and claims 16, 17, and 21-26 which depend therefrom define allowable subject matter over Kardauskas.

#### 35 USC 102 (b) on Cole

Claims 1-3, 7-12, 15-17, and 21-26 were rejected under 35 USC 102(b) over Cole US6008449. Cole appears to describe a solar cell assembly for focusing incident radiation on a solar cell. Column 7, line 55 through column 8, line 7 recite (with emphasis):

In one embodiment, adjacent solar cells 22 may be electrically coupled by **connecting the thin film portion 66 and substrate 68 of each solar cell to the reflective layer 48 with conductive contacts 72.** Accordingly, the reflective layer 48 can comprise an electrically conductive material. The reflective layer 48 has gaps at the transparent regions 42 so that current is directed in series through each solar cell 22. Other circuit arrangements are used in other embodiments. **The conductive contacts 72 may comprise continuous conductive beads, as is best seen in plan view in FIG. 2 or alternatively may comprise intermittent bead portions (not shown). The conductive contacts 72 are formed from solder or other conductive materials** known to those skilled in the art which electrically couple adjacent solar cells 22 via the reflective layer 48 positioned between each pair of solar cells. Accordingly, the reflective layer 48, which serves to reflect and focus incident radiation, serves the dual purpose of electrically coupling the solar cells 22 which would otherwise require a separate, parasitic means for electrical coupling.

Similarly, Cole, column 9, lines 29-46 recite (with emphasis):

As shown in FIG. 5, the film layer 26 is positioned adjacent the support layer 28 such that the reflective layer 48 is adjacent the lower surface 34 of the support layer. The film layer 26 is bonded to the support layer 28 with the adhesive layer 38. As shown in FIG. 5, the adhesive layer 38 completely fills any gaps between the reflective layer 48 and the lower surface 34 to reduce the potential for any reflections at the interface between the film layer 26 and the support layer 28. The solar cells 22a and 22b are positioned between the opaque regions 44 to receive radiation reflected from the first and second reflective portions 50 and 52, respectively. In one embodiment, the reflective layer 48 is electrically conductive and the solar cells are electrically coupled to the reflective layer with wires or tabs 72a. In another embodiment, the substrate 68 of the solar cell 22 may be bonded directly to the reflective layer 48 at a bond site 72b. In other embodiments, other connection means may be used to couple the solar cells 22 to the reflective layer 48.

Thus, in Cole, the solar cells are electrically coupled to the reflective layer with beads, solder or with wires or tabs 72a or at bond sites 72b that appear to be located at side edges or on the sun-facing surfaces of the solar cell. **It does not appear that solar cells are described as or intended to be “mounted on” the reflective layer.** As illustrated in Figure 2 of our patent application, the simple mounting of solar cells 22 on top of the metal foil layer 42 provides a far simpler, quicker construction than that of Cole as well as a reliable electrical connection.

With respect to dependent claim 9, Applicant notes the Office Action statements on page 9 which suggests that the fact that the metal foil is metal automatically means that a thermal heat sink results.. Applicant agrees that the foil is metal but traverses the implication that a thermal heat sink necessarily results from it.

Accordingly, Applicant respectfully submits that claim 1, claims 2, 3 and 7-12 which depend therefrom, claim 15, and claims 16, 17, and 21-26 which depend therefrom define allowable subject matter over Cole.

### 35 USC 103

Applicant notes the rejections of claims 4-6, 18-20, and 27 under 35 USC 103(a) over Kardauskas in view of Epstein US20030058553; Claims 14 and 28 under 35 USC 103(a) over Kardauskas in view of Glenn US6313396; Claims 4-5, 13, 18-20, and 27 under 35 USC 103(a) over Cole in view of Epstein; and Claims 14 and 28 under 35 USC 103(a) over Cole in view of Glenn.

Each of these dependent claims depends from one of the above discussed independent claims 1 and 15 which Applicant believes to be in condition for allowance for the reasons discussed above.

Furthermore Applicant does not concur with each of the assertions regarding the dependent claims in general and, in particular, Applicant traverses the Office Action statements regarding claims 14 and 28 and Glenn. In Glenn, holes 22 do not appear to provide any sort of cooling. Instead, holes 22 appear to be present to provide a path for the conducting elements 17 (FIG. 1) or 37a (Fig. 2) to metal traces 19 as can be seen in column 5, lines 30-36

Summary

Applicant respectfully requests that a timely Notice of Allowance be issued in this case. Should the Examiner believe that anything further is needed to place the application in better condition for allowance, the Examiner is requested to contact Applicant's undersigned representative at the telephone number below.

Respectfully submitted,

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